

AD-A184 167

BOND CHARACTER AT A SILICON/COPPER SURFACE(U)  
PENNSYLVANIA UNIV PHILADELPHIA DEPT OF PHYSICS  
C H PATTERSON ET AL. DEC 86 TR-2 N00014-86-K-0384

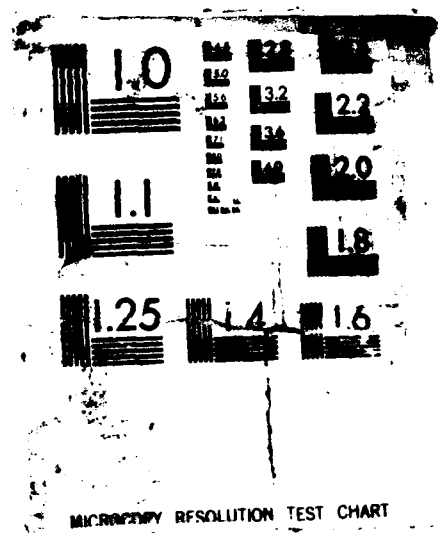
1/1

UNCLASSIFIED

F/G 7/2

NL

END  
9-87  
DTIC



AD-A184 167

OFFICE OF NAVAL RESEARCH

Contract N00014-86-K-0304

R&T Code 413F0005

Technical Report No. 2

DTIC  
ELECTE  
SEP 01 1987  
S D

Bond Character at a Silicon/Copper Surface

by

C.H. Patterson, E.W. Plummer, and Richard P. Messmer

Abstract Submitted

for the March 1987 Meeting of the

American Physical Society

University of Pennsylvania  
Department of Physics  
Philadelphia, PA

December 1986

Reproduction in whole or in part is permitted for  
any purpose of the United States  
Government

\* This document has been approved for public release  
and sale; its distribution is unlimited.

\*This statement should also appear in Item 10 of the Document Control Data-DD  
Form 1473. Copies of the form available from cognizant contract administrator.

87 9 1 008

Abstract Submitted  
for the March Meeting of the  
American Physical Society  
New York, NY  
16-20 March 1987

Suggested Session Title:  
23g, Surfaces, Semiconductors

Bond Character at a Silicon/Copper Surface. C.H. PATTERSON, E.W. PLUMMER and R.P. MESSMER, University of Pennsylvania. The ionic and covalent character of bonding is considered for the Si(111)-(5x5)Cu phase formed when one monolayer of copper is deposited on Si(111)(7x7) and subsequently annealed to 600°C. Localized orbitals and ab initio calculations have been employed to evaluate total energies and types of bonding for Cu adsorbed in several different sites, including the structure proposed by Chambers et al (1) on the basis of their angle resolved Auger electron spectroscopy results. The relation between the bond character of this phase and its surface spectroscopic properties is discussed.

(1) S.A. Chambers, S.B. Anderson and J.H. Weaver, Phys. Rev. B32, 581 (1985).

Standard Session Preferred

Accession For	
NTIS	CRA&I <input checked="" type="checkbox"/>
ERIC	TAB <input type="checkbox"/>
U.S. GPO	<input type="checkbox"/>
By	
Date	
Availability	
Notes	
A-1	

*E.W. Plummer*

E.W. Plummer  
Dept. of Physics  
Univ. of Pennsylvania  
209 S. 33rd St.  
Philadelphia, PA 19104



2

END

9-87

DTIC